Impact of Feed Exports on U.S. Cattle Herd Decline and Counterfactual Subsidy Scenario

Prepared for: U.S. Department of Agriculture (USDA), U.S. Department of Commerce (DOC), and State Agricultural Departments

Executive Summary

The U.S. cattle herd has fallen to approximately 86.7 million head (January 2025), marking the smallest inventory since 1951. While drought and climate conditions played a major role, feed costs and market-driven exports were decisive factors in the accelerated herd liquidation. During the 2022–2024 period, record-high exports of corn, soybeans, and alfalfa coincided with domestic feed shortages. Producers faced inflated feed prices while feedstuffs were shipped abroad for higher margins, forcing widespread culling and contraction of the national beef cow herd.

If a federal subsidy had bridged the price gap between domestic and export markets—allowing ranchers to purchase feed at the prior-year price—herd losses would have been significantly mitigated. Modeling suggests that between 700,000 and 1.6 million beef cows could have been retained, equivalent to a 2.5–5.7% larger herd in 2025. This retention would have preserved an additional 0.3–0.7 million calves entering the supply chain in 2025–2026.

Data Overview

Key indicators from USDA and trade statistics form the basis of this analysis:

Metric	Value	Source
Total cattle & calves (Jan 2025)	86.7 million head	USDA NASS
Beef cows (Jan 2025)	28.2 million head	USDA NASS
Recent peak beef cows (2019)	31.8 million head	USDA NASS
Hay stocks (May 2023)	14.5 million tons (2nd lowest since 1950)	USDA NASS
Corn exports (2023)	61.7 million metric tons	USDA FAS
Soybean exports (2023)	52.2 million metric tons	USDA FAS
Forage/hay exports (2023)	3.2 million metric tons	USDA FAS

Analysis

Feed exports rose sharply while domestic availability declined. Corn, soybean, and hay exports reached some of the highest volumes in a decade, creating upward pressure on domestic feed prices. Ranchers operating in drought-stricken regions—particularly Texas, Oklahoma, and Kansas—faced feed costs that made herd maintenance economically unviable.

Unlike oil or grain reserves, the U.S. has no mechanism to temporarily reserve or prioritize feed for domestic livestock use during supply stress. This absence of policy, combined with market incentives

favoring exports, created a structural imbalance where ranchers bore the economic burden of global arbitrage.

Counterfactual Modeling Results

Two models were used to estimate how a targeted feed-price subsidy could have affected herd retention:
1. Attribution Model: assumes 40–60% of herd liquidation was feed-driven and a subsidy would retain 50–75% of those cows.
2. Feed-Equivalency Model: uses export volumes as a proxy, showing that offsetting just 10% of feed exports equates to ~1.55 million additional cow-years.

Scenario	Saved Cows (Head)	Herd Size (Head)	Increase vs. Baseline
Conservative	720,000	28.9 million	+2.5%
Central	1,170,000	29.4 million	+4.1%
Aggressive	1,620,000	29.8 million	+5.7%

Policy Implications

The analysis suggests that modest, time-limited interventions could prevent major losses in domestic herd capacity without disrupting trade structures. Key actions include:
• Establish a **Strategic Feed Reserve** (SFR) under USDA to store hay and feed grains for emergency domestic use.
• Implement **temporary export throttles or offsets** when hay stocks and forage conditions fall below defined thresholds.
• Coordinate with DOC and State Agricultural Departments to ensure critical feed supply chains remain domestic during national drought declarations.
• Support post-drought herd rebuilding via targeted low-interest financing and feed assistance programs.

Conclusion

The contraction of the U.S. cattle herd was not solely an environmental event; it was an economic one shaped by feed market dynamics. Strategic coordination between USDA, DOC, and state-level agencies could safeguard against similar future declines by ensuring feed supply stability, balancing export revenues with domestic food security, and maintaining a resilient livestock sector.